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SOURCE Su-lien Chuan-chia Tsai Hsin-chung-kuo (Soviet Specialists in New China),  
Lao-tung Ch'u-pan She, 1950.

ECONOMIC AND SOCIOLOGICAL DEVELOPMENTS IN CHINA  
AIDED BY SOVIET ADVISERS, 1945 - 1949

Comment: This report gives information on the economic and soci-  
 ological developments in China, 1945 - 1949, and shows how this devel-  
 opment was aided by Soviet advisers. Although the report presents  
 basic economic and sociological information, the Chinese document from  
 which it was taken, Su-lien Chuan-chia Tsai Hsin-chung-kuo (Soviet  
Specialists in New China) is essentially a propaganda pamphlet to  
 boost the Sino-Soviet friendship drive. Most of the propaganda has  
 been omitted from this report. Only enough has been retained to in-  
 dicate the types of eulogistic praise rendered the Soviet advisers.

As a consequence, the information in this report is occasionally  
 disconnected. In practically all cases it is fragmentary, but, it is  
 usually specific. Names of Soviet advisers and all information on  
 them, all specific economic data and general economic developments,  
 and all significant sociological data have been retained.

The information covers, inter alia, 1947 - 1949 plague conditions;  
 metal works in T'ai-hsing-shan; the Shih-ching Shan Electric Power  
 Plant; industries and facilities in Peiping; the Tientsin Steelworks;  
 the Northwest Steel Company in T'ai-yuan; the T'ang-shan Electric  
 Power Plant, the An-shan Iron and Steel Works, and various railways.

The type of information ranges from discussion of the complete  
 reconstruction of the Far Eastern Ferrous Metal Machine Factory in  
 Dairen to the placing of factory names on the inside of rails; from  
 repairs of furnaces and generators to a review of a bus company's  
 discarded materials; from the An-shan Iron and Steel Works to the  
 Peiping Sewage System.

Names of the Russian advisers have been approximated from the  
 Chinese characters. The Russian approximation is followed by the  
 Wade-Giles transliteration in parentheses.

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A. Soviet Specialists Eliminate Plague

The Japanese imperialists set up many germ factories in the Northeast which they destroyed before the irresistible Soviet armies defeated them. When the Japanese destroyed their germ factories, they scattered germs far and wide to harm the Chinese people. From 1945 on, the people of the Northeast suffered greatly from communicable diseases, especially from plague, which was particularly virulent in 1947, appearing in 630 villages and causing the deaths of 23,170 persons.

Under these emergency conditions, the Central People's Government invited Soviet antiplague forces to come to their rescue. The Soviet Union Red Cross Semimonthly (Pan-yueh) Association organized a team of specialists, antiplague workers, disinfectors, and nurses, who went to the most virulently afflicted area in Jehol. The Soviet team brought with them good drugs and instruments and saved nearly 10,000 lives in Ch'eng-te and Ch'ih-feng. They gave antiplague inoculations to everyone in the infested areas, disinfected all buildings and belongings, and encouraged the people to catch rodents. As a result, 28 railway carloads of rodents were destroyed and the epidemic was arrested.

From 1947 to 1949, Soviet advisers trained a large number of antiplague personnel and contributed to the Northeast authorities over 260 types of antiplague equipment and medicines. Statistics reveal that during 1947 there were 30,326 /see number of deaths above/ cases of plague throughout the Northeast; in 1948 the number was reduced to 5,947; and in 1949 to 417, with only 250 fatalities. In Jehol Province only 20 died.

The leader of the antiplague team in Jehol was Comrade Khokolva (Ho-ho-lo-wa). One of the laboratory workers was a woman named Malin (Ma-li-na). One of the specialists was a Comrade Kolishin (K'o-li-hsin).

The people of Jehol wrote 1,123 letters to the Sino-Soviet Friendship Association expressing their heartfelt thanks. The letters contained such expressions as "your international spirit has resolved our ideological problems. We are profoundly grateful and happy. The Chinese people will never forget you."

The Soviet antiplague team, having completed its labors, returned home on 28 November 1949. Chairman Kao Kang of the Northeast People's Government addressed them with the words "Your lofty spirit of internationalism has saved the lives of the people in the afflicted areas of the Northeast. We thank you from the depths of our hearts."

B. Soviet Specialists at T'ai-hsing-shan

In January 1950, a number of Soviet specialists arrived in T'ai-hsing-shan to inspect industries and give advice in solving problems. When they entered one factory they asked questions and looked about carefully for a few minutes. When they looked at the overhead power shaft and noticed the copper belt pulleys, they were surprised, and, shaking their heads, remarked that copper was hard to obtain and that a cast-iron pulley would do just as well. Iron is plentiful at T'ai-hsing-shan. Copper could be secured only by collecting old copper utensils, yet most of the pulleys on the power shaft were copper. A pulley requires at least 10 catties of copper which could better be used for other parts, but nobody seemed to have thought of that.

The specialists visited a firebrick kiln where nearly all the brick turned out bad a slight warp so that two bricks would not make a close-fitting joint when laid together. Consequently these brick could not be used in refining furnaces and puddling furnaces. Much study had been given to this problem by workmen and technical instructors, but no solution had been found. The workers brought the problem to the attention of the Soviet specialists. Some had previously thought the trouble was that the kiln wall was not plumb, but they had not dared to try to change it. The Soviet specialist, Shulik (Su-li-k'o), after inspecting the kiln, agreed with them and advised straightening the wall. With his help they did this within a few days and then the brick turned out were perfect in shape. The workmen spread the fame of the "big brother" far and wide.

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Two ovens had gone bad in a coke works. A Soviet specialist suggested that the oven wall had warped. Under his direction, this was rectified and the ovens were restored to productivity.

C. Soviet Specialists at the Shih-ching Shan /Hopeh/ Electric Power Plant

The electric power plant at Shih-ching Shan, near Peiping is a large one. On 26 September 1949, the Soviet electrical specialist Vishnevskiy (Wei-shen-nieh-fu-ssu-chi), the steam power specialist Chiloneshruv (Ch'ieh-lo-nei-shih-jun-fu), and boiler specialist Shishov (Shih-shai-fu) came to the plant, accompanied by an interpreter, to help in the work. After their arrival furnace No 14 and generator No 6 developed trouble, but with their help and the zeal of the workmen repairs were soon made. The specialists reckoned it would take 7 days to repair generator No 6, but actually it only took 4 days.

The specialists left the plant at Shih-ching Shan on 29 December. During the short period of 2 months they had repaired furnace No 14 and generator No 6. The workmen had learned many things and were all reluctant to see them leave.

D. Soviet Specialists Assist in Construction of New Capital

During September 1949, a number of Soviet specialists came to Peiping to assist in revamping it as the national capital. Some were street railway experts; some were bus line experts, others were water supply and coal gas experts.

When visiting the Yen-ching paper mill they saw three machines in action and inquired concerning the production. They told the comrade in charge that production should be stepped up 20 percent. When visiting the traction company they were told by management that the company had too few cars and that it was planning to import cars from abroad. The experts visited the car barns and told the management there were enough unused parts about to construct all the cars needed. When they inspected the cars on hand they noted their poor quality and advised the institution of a system of responsibility and cited Soviet conditions, indicating that in the USSR inspectors had to sign their reports and assume responsibility. The company put these suggestions into effect and greatly improved the condition of the cars in service.

While inspecting the bus company's pile of discarded material they noticed a number of usable parts, and picked them out themselves. They told the supervisor that nothing should be wasted. This spirit of responsibility on the part of the Soviet specialists was very instructive to the entire staff of the company.

When they saw workmen welding with oxyacetylene flames without protective eye-shades they said that lack of such protection was the superintendent's responsibility. If eye-shades were provided and the workmen neglected to wear them, then that was the labor union's responsibility. They stressed that attention to workers' health is very important.

Originally there was no schedule for inspection and repair of the public bus company's vehicles. The Soviet specialists proposed that a washing and repair schedule be set up and that sufficient trucks be converted to passenger cars to total 100. With their zealous aid the beginnings of a scheduled repair system were made.

After inspecting the well and the machinery of the city water system and observing the length of time the machinery had been in use and its present state of efficiency, the specialists showed the workers how to use a lead powder substitute and gave them Soviet patterns to copy. They discovered that insufficient chlorine was being added to the water to insure complete bactericidal action and proposed a standard chemical test to protect the health of the people of the metropolitan area. They also presented Soviet methods of water management for our study. On the advice of the Soviet specialists the machinery in the new ironworks was cleaned. Following the advice of the specialists the city water company wrapped the water pipes lying near the streetcar tracks in burlap to prevent their becoming charged with electric current and cracking. With the aid of the specialists a practical, efficient one-year plan for the city water system was set up.

Peiping can be most grateful to the Soviet specialists for the repairs on the ancient street drainage system constructed during the Ming dynasty. In time of heavy rainfall the drains would become clogged. The Nationalists had

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invited American engineers to survey the system. After a superficial survey from the outside they advised complete rebuilding of the system according to American models. This would have meant good business for American manufacturers supplying all the materials; and, since Chinese would be unable to use the American products, it would also have meant supporting a large staff of technicians who required very high salaries. The Soviet specialists themselves went down into the sewers to inspect them and came up with the verdict that the Peiping sewers were the best in the world. They advised that the sewers should be preserved and repaired and that this could be done with old materials. This shows that Soviet specialists not only exert themselves to aid China, but also have consideration for China's economic and financial strength.

#### E. Soviet Specialists at the Tientsin Steelworks

Early in 1950, we received much help in both large and small problems from the Soviet specialists who came to the Tientsin Steelworks. Following British and American techniques, it had been the custom at this steelwork to allow 15 days to heat the Martin furnace after it had been shut down for repairs, starting with a small fire and gradually increasing it to full capacity. After the Soviet specialists looked the furnace over they said it was a very good one and that only 4 days were necessary to heat it. The workmen followed this advice and saved 10 days for each heating after repairs.

The Soviet specialists proposed that repairs on the Martin furnace be undertaken without drawing the fire, thus saving 9 days of time. Some of the workmen feared they would be burned in such an undertaking, but after the "big brothers" had carefully explained the method and planned each man's part in the job the workmen agreed to try. At first they were very slow and cautious. After the firewall had been repaired, the workmen gathered courage. But because there were certain leaks at the base of the firewall the heat became so intense some workmen could not endure it and gave up. Communist Party Member P'an Chang advised reducing the fire for a short time until the leaks could be plugged. He then personally led a group clad in water-soaked padded clothes into the 800-900 degree temperature to make the needed repairs. Several times their clothes caught fire, but in 40 minutes they had closed the leaks and made it possible for the rest of the job to be finished. When the Soviet specialists, one of whom was Malisiev [Ma-li-shih-yeh-fu], observed the zeal they said that under the Chinese Communist leadership there were no problems the Chinese could not solve. The workmen observed that with the aid of their Soviet "big brothers" China's reconstruction can be very quickly completed.

The Soviet specialists took note of very small matters. Once when a few grains of sand fell into buckets of molten steel they were very much disturbed. The Chinese workmen thought such a small amount of sand in so much metal would not matter, but the specialists said "suppose this metal should be made into a steel cable for a coal-mine shaft hoist and should give way because of the sand in it. Would not the consequence be very great? Not even one grain of sand can be allowed in molten metal." The workmen accepted the idea and corrected their carelessness. Soviet specialists also gave careful attention to safety measures in the shop, such as guard rails around machines.

One day the Soviet specialists saw a number of machines pushed to one side and covered with dust. They asked why, and, when told the machines were out of order, replied that, even so, they should be kept clean and protected, "for, out of something bad, something good may come."

When the Soviet specialists first came to the plant many of the workmen were surprised. Some of them asked, "Are not all foreigners spies?" But after the workmen had observed the way in which the specialists helped them and

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managed things they all changed their opinions. One smelter workman, Wen Chao-lin, said "We have learned many skills from the Soviet 'big brothers.'" A great interest in the Russian language developed among the workmen. The specialists opened a class for them. The workmen greatly appreciated their lectures on smelting.

When the specialists were leaving, the workmen presented them with a banner inscribed with the names of all the factory workers. The Soviet specialists said that they would take it back to the USSR and place it with the decorations they had received from Stalin.

#### F. Soviet Specialists at T'ai-yuan

In November 1949, Soviet Specialist Merchiev (Ma-erh-chi-fu) came to T'ai-yuan. He first spent 20 days looking over the Martin furnace of the Northwest Steel Company. He made many suggestions and the production of superior steel from each furnace was stepped up from 1,200 tons to 1,500 tons per month as a result. The Northwest Steel Company was following the Japanese method of heating the furnaces 25 days before putting in the material and turning out steel. At the same time, the silicon brick in the top of the furnace would fall because of uneven temperatures. The Soviet specialist analyzed the nature of these bricks and offered suggestions for improvement. The preliminary firing time of the furnaces was cut to 21 days, the brick no longer fell, and steel production was stepped up greatly. Formerly, after four or five batches of steel had been turned out, it was thought necessary to repair the furnace base. But a new method of repairs suggested by Merchiev resulted in repairs being necessary only after each 20 batches had been turned out, thus saving 13 repair jobs a month at a great saving of labor and expense. Many small items, such as using light wooden rakes instead of heavy iron ones for cleaning out slag, were recommended, resulting in greater satisfaction to the workers.

After a short time, Merchiev returned to Peiping on business and Oliov (Ho-li-hao-fu) took his place at T'ai-yuan. He soon observed that the workmen were not wearing their blue goggles enough to protect their eyes. He proposed that the goggles be attached to their caps for convenience and the workers considered this a good idea.

The greatest job done by Oliov was the repair of the No 2 level hearth furnace which went out of commission near the end of December 1949 shortly after he arrived. After study, he recommended that the base of the furnace be covered with a layer of magnesium sand from the river and then covered with a layer of steel slag. From 29 December on for 3 days Oliov did not leave the furnace day or night. The furnace was then filled and fired, but when the ore melted the magnesium sand buckled and when the steel had been poured there was again a deep hole in the floor of the furnace. Oliov then decided to try pure magnesium limestone to cover the floor of the furnace. He also sprinkled a thin layer of iron scales over the floor, scattering the iron by hand to get a more even distribution. After four days of preheating, the furnace was loaded. After the batch was turned out the floor was found to be in excellent condition, level, glossy, and solid. Even after turning out seven batches in succession there was no deterioration. The workmen all acknowledged the resourcefulness of the Soviet specialist.

After the Soviet specialists came to the Northwest Steel Company the workmen increased production rapidly. One workman loaded a furnace in one hour and 25 minutes, 35 minutes less than the goal of 2 hours set by the Soviet specialist. Wang Kuei-ying, a foreman, turned out a batch of steel in 7 hours 43 minutes.

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#### G. Soviet Specialists at the T'ang-shan Electric Power Plant

During November, Soviet specialists Nikov (Ni-ko-fu) and Kolakov (Ko-la-ko-fu) came to the T'ang-shan Electric Power Plant. After studying the plant for some time and asking many questions, as well as having many questions asked of them, they made many very valuable suggestions regarding production and controls. For example, 70 people were engaged in carrying coal on poles. The Soviet specialists considered this wasteful of manpower. They proposed the installation of a belt carrier to convey coal from the pile to the stoker. They also pointed out the danger of trouble from having ceiling condensation dripping onto electric machines and wiring and recommended speedy remedial measures. They said that transformers should have acid filters attached because over a period of time transformers become acid, and advised that silica (silicon dioxide) or alumina ( $Al_2O_3$ ) filters should be used lest the acid reaction spoil the resistance of the transformers.

#### H. Soviet Specialists Aid in Railway Construction

For the first time in all the history of China, there is now through rail traffic from Lupin to Canton. This would not have been true without the aid of Soviet technicians. The Soviet specialists came to China and said, "We are not here as guests; we are as though we were in the service of our own country." To understand what they meant let us look at the way they helped us in our railway construction.

First, consider the Canton-Hankow (Ao-han) railway. When the forces of General Pai Chung-hsi were defeated by the liberation forces Pai's forces damaged or destroyed every one of the 61 important bridges on that line, totaling 4,660 meters in length. The retreating forces boasted that through traffic on the Canton-Hankow railway could not be restored for 2-3 years. But within 6 months, by the strenuous combined efforts of our railway maintenance and railway guard staffs, under the direction and advice of 17 Soviet specialists, all these breaks in the line had been repaired.

When the enemy destroyed the Peiping-Hankow railway bridge over the Huang Ho they were certain that 1-2 years would be required for its restoration. However, with the planning and aid of Soviet specialists, only 50 days were required to put it into service.

The KMT authorities spent 4 years building the big bridge over the Hsiang Ho [in Hunan] connecting the Canton-Hankow railway with the Hunan-Kwangsi-Kueichow line without entirely completing it. Under the leadership of Soviet specialists, Communist railway workers finished it completely in 35 days.

All of the old Chinese specialists were of the opinion that the bridge over the Yellow River [on the Peiping-Hankow line] should be completely rebuilt. Soviet specialists found that the bridge could be strengthened while still being used and the speed and load on the bridge could be increased. Formerly, a small locomotive drawing only two freight cars at a time could cross the bridge safely at very low speed, and this process required  $1\frac{1}{2}$  hours for a crossing. Now, a whole train can cross at once in only 15 minutes.

Another example of how Soviet aid saved time and money for Chinese railways was the large railway bridge over the T'a-ha Ho on the Ch'i-ch'i-ha-erh-Pei-an Railway. At the time of the liberation, three of the bridge buttresses were decidedly off plumb, and one of them was especially bad. Many persons believed the only solution would be a new bridge. This would have stopped traffic for at least 2 months and would have required a huge amount of capital and material when both were scarce. Meanwhile, locomotives were still slowly crossing at great risk. Soviet specialists made several studies and decided that the buttresses could be restored to plumb without interrupting traffic. This was done and they are still in good condition.

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Specialist Bakoliev (Pa-k'o-lieh-fu) and Specialist Shidolenko (Hsi-to-lien-k'o) endured many difficulties in their work. During the building of the bridge No 8 on the western section of the Lung-hai (recently renamed Chung-hsin) Railway, another specialist became critically ill.

Soviet specialists are very sensitive to China's present shortages of materials. For example, when a shortage of I-beams prevented starting work on the M1 Eo bridge, the Soviet specialists, who had seen large piles of such materials at Heng-shan, Hunan, advised going there for I-beams.

The specialist even pointed out small items such as placing the factory names on the inside of the rails to prevent the name becoming obscured by oil dripping from the cars in passing.

In the matter of rails China must be grateful to the Soviet Union. Under the provisions of the 1949 trade agreement between the Soviet Union and the Northeast People's Government, in August of that year, the Chinese applied for rails and in September sufficient first quality new rails arrived for 500 kilometers of railway. It was just at this time that Chiang K'ai-shek, aided by imperialist America, was conducting a blockade of China. These rails enabled China to complete reconstruction on the Peiping-Hankow and Canton-Hankow railways and link again the north and south. Thus the blockade was basically frustrated. We also learned who was our worst enemy and who our best friend.

#### I. Soviet Specialists at the An-shan Iron and Steel Works

Soviet specialists arrived at the An-shan Iron and Steel Works in the autumn of 1949. Original plans called for the restoration of one of the upright smelter furnaces by August 1950. The Soviet specialists proposed completing the job before the end of 1949. They said that with the practical liberation of the whole country, industrial reconstruction depended on the steel from An-shan. Many engineers did not believe it possible to lay brick successfully in the severe cold of the Manchurian winter. But the Soviet specialists insisted that in the 36-degrees-below-zero weather of Siberia all kinds of furnaces had been built. Why, then, could not a furnace be laid in the 20-degrees-below-zero weather of An-shan? So, under the direction of the Soviet specialists the building was begun and victoriously completed 5 days before the end of 1949.

Furnace No 9 of the An-shan Iron and Steel Works was tightly sealed, the furnace was difficult to heat, and the heat was difficult to maintain at an even level. The Soviet specialists advised opening the seal. The staff on all levels opposed this. Engineers and technicians trained in Japan, Britain, and the US all said it had never been done in those countries. Those trained in Chinese universities said they had never seen such a method mentioned in books.

Thereupon, the Soviet specialists asked for a general staff meeting where the matter could be discussed. They were willing to give up their suggestions if their arguments were not convincing. After the discussion, the weight of their 30-odd years of construction experience prevailed. Some Chinese completely accepted their idea and others were willing to give it a trial. The idea was tried. It was found that the furnace heated faster and more evenly and everybody accepted the validity of the method.

Furnace No 8 had required 19 to 20 hours to turn out a batch of coke. The Soviet specialists were not satisfied with this. By various adjustments they were able to cut the time to 10 hours. Furnace No 7 was slow. The Soviet specialists wanted to turn out a batch of steel in 10 hours. This seemed impossible, but eventually it was achieved. The increase in the production of these last two furnaces meant turning out several thousand more tons of steel a month.

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The quota set for the An-shan Iron and Steel Works for 1950 was more than six times that for 1949. The workmen all agreed that with the experience of the past year and the aid of the Soviet specialists they could reach and surpass the assignment imposed by the needs of the country.

#### J. Soviet Specialists at the Mukden Refinery

The Mukden refinery was restored in 1949, but there was general concern over raw materials. The refinery required copper ore, but the Japanese and their puppets had damaged the mines, and they could not be restored quickly. A small amount of copper ore was being produced but its lead content was too high. Hence it appeared the refinery could operate only as long as the stock of good copper on hand lasted. By autumn the stock was nearly exhausted.

Some of the workmen suggested trying to obtain good copper from the mountain-high piles of low-grade ore containing more than 6 percent of lead that had been accumulating over the years as rejects. However, the engineers said good copper could not be obtained from this grade of ore. Most of the workers and staff members accepted this verdict, but a few workers wanted to try. They studied the problem, stepped up the power of the furnace air blast and from ore containing up to 7 percent of lead they produced good copper, thus breaking down the deep-seated conservatism that had prevailed for a decade. However, since they were still unable to produce good copper from ore containing more than 8 percent of lead the shortage threat still existed.

At this time the Northeast People's Government detailed a Soviet specialist to the plant to attempt an improvement of techniques. After studying conditions in the plant he agreed that stepping up the force of the air blast was correct; he also suggested changes in raw material feed, and improvement in placing the coke. Thereafter low-grade ore containing up to 14 percent of lead could be converted into good copper. The problem of material supply was thus solved.

Formerly, the blast furnaces in the refinery were made of clay which required renovation at frequent intervals with a loss of 10-odd hours for each renovation. A technician and a worker decided that it would be better to use magnesium brick to build these ovens. After much discussion and considerable opposition their plan was approved. The furnaces they built had some advantages, but were not perfect. The Soviet specialist arrived and decided the furnaces were too small. He designed a larger one that increased production 80 percent but found that the workmen were using too much time in selecting brick to build the round furnace so he designed a square one. This design saved 30 percent of building time.

Formerly, to insure freeing the ingots from the molds easily, yellow clay was used for the molds. However, during electrolysis this clay impeded the passage of electric current. The Soviet specialist devised a special tool that eliminated the need to use clay.

With the inspiration of the Soviet specialist, the lagging production of the Mukden refinery exceeded the goal during January 1950 by 20 percent in copper and 54 percent in lead.

#### K. Soviet Specialists in a Mukden Rubber Plant

During two visits to a Mukden rubber plant the Soviet specialists Kolshakov (K'o-lo-sha-k'o-fu) and Nizolov (Ni-tso-lo-fu) carefully checked the machinery in the plant and made a number of valuable recommendations for improvement in plant controls.

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When inspecting the raw material they inquired closely into the source and adequacy of the supply. When they heard that the raw material stock pile was sufficient for only 3 months they said that rubber raw material came from British-controlled territory and that the British imperialists were not interested in China's success. They explained that the Soviet Union, after the October Revolution, had suffered from imperialist encirclement and, consequently, had developed her own resources of synthetic rubber. They said conditions favorable to synthetic rubber production existed in the Northeast.

In the electric power plant they pointed out such shortcomings as no rubber insulation for the switchboard, no leather gloves for the workmen, no posted directions concerning the purpose and use of electrical devices, and no proper safety provisions in particularly dangerous spots.

As soon as Nizolov entered the spinning shop he pointed out that there was too much play in the spindles, and that this was the cause of poor quality production. Many spindles lacked set screws, some were high, some low, some inclined to the left and some to the right. The Chinese had not even observed these faults. The Russians pointed out that such things were due to serious defects in factory control. All around the machines were quantities of scattered cotton and tangled thread. Nizolov pointed out that in the Soviet Union no such waste would ever be permitted. As they observed the rapidly moving belts devoid of guide rails they remarked on how easily a workman could be injured and that the great noise they made could shatter the nerves of the workmen.

The Soviet specialists paid much attention to fire prevention and safety measures, explaining that, while Russian expenditures on these items may seem large, they were far less than the cost of a big fire. They said in matters of this kind it was necessary to take a long view of budget needs. Kolshakov told of his own experience in the USSR where he had been in charge of a budget planning staff of 96 persons in a factory with 3,000 workers. "This might seem like wasteful use of manpower," he said, "but in Soviet factories not one minute of time, no, not even one second, is wasted." To the manager of the rubber factory he patiently explained that the piece-work system was the most economical of labor systems and most lucrative for the workers.

He further explained that although quantity production is important, quality is the most important desideration. First of all, if quality is good, the Soviet factory manager is rewarded; if quality is poor, according to Soviet practice, the manager is sentenced to 8 years hard labor. At this point, Kolshakov said to the rubber plant manager, "Do not be afraid. It is not really difficult to maintain quality; careful, constant inspection is the secret of it."

When Kolshakov understood that the manager of this factory was not acquainted with technical processes he laughed, saying, "No matter, if you are willing to learn, all will be well. A manager does not need to work like workmen, his duty is to be thoroughly conversant with the past over-all production of the plant."

#### L. Soviet Forestry Specialist in the Northeast

Comrade Dainov (Ta-i-no-fu), invited by the Chinese People's Government to the Northeast, arrived in February 1950. He was 50 years old and had had 25 years experience in forestry. The rest of the chapter is an eulogy of Dainov's unselfish devotion to the interest of the Chinese people.

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#### M. Right to Manufacture an Electric Rivet Heater

Early in September 1949, the Director of the Central Railway Bureau of the Northeast, Hsi Kwang-sheng received a letter from the Inspection Division of the Chinese-Ch'ang-ch'un Railway in Harbin. The letter explained that previously the chief of the Inspection Division of the Chinese-Ch'ang-ch'un Railway, Mechanical Engineer Lieutenant Romanov, (Lo-ma-no-fu), and the chief of the Electrical Power Section of the Mechanical Department of the Central Bureau, Mechanical Engineer Captain, Shchefsanov (Ssu-chih-pa-no-fu), had devised a high-heat electric rivet heater. Since it had been fabricated and successfully used in the Harbin railway shops the heater and blueprints were now being turned over by the inventors to the Director of the Central Railway Bureau together with the right of manufacture as a token of the solidarity of the great friendship of the two great peoples. Hsi Kwang-sheng studied carefully the letter, the heater, and the blueprints, and then issued an order for the manufacture and use of the heater in all shops of the railway where needed.

This heater invented by these two Soviet friends has a number of good points: (1) It has wheels and so is movable and can be used anywhere electric current is available. (2) It saves coal. (3) It does not require experts to use it. (4) A single riveter can use it alone. (5) It will heat  $\frac{1}{4}$ -inch to one-inch rivets that are 1-3 inches long. (6) It requires only 10 seconds to one minute to heat rivets sufficiently. (7) Rivets thus heated are not damaged. (8) It uses a  $1\frac{1}{2}$ - to  $2\frac{1}{2}$ -volt current. (9) There is no accident hazard to the user. (10) It uses no current except when in actual operation, thus is very economical. (11) There is no smoke and no ash. (12) It poses no health hazard. (13) It has a four-heat rheostat.

#### N. Soviet Friends on the Chinese Ch'ang-ch'un Railway

[This chapter is devoted exclusively to a recitation of humanitarian activities of Soviet specialists, such as getting hospital accommodations for a sick wife, etc. The names of the Soviet specialists mentioned and any pertinent data on them is listed below.]

1. Brashmiskiy (Pu-la-she-hsi-mi-ssu-ch'i), Division Chief at San-k'o-shu
2. Ilyin (I-li-yin), Deputy Shop Chief at Harbin
3. Subienko (Su-pien-k'uo), Personnel Chairman, Labor Affairs Department in Harbin [Chinese-Ch'ang-ch'un Railway Office?]
4. Bao (Pao), Chief, Ch'i-ch'i-ha-erh Railway Bureau
5. Shashkov (Sha-ssu-kuo-fu), Machine shop of the electrical division [of the Chinese Ch'ang-ch'un Railway] in Mukden

#### O. Soviet Division Chief Trains Women Locomotive Drivers

On 8 March 1950, on the first international woman's day anniversary after the establishment of the People's Republic of China, the first Chinese locomotive driven by a woman started out of the roundhouse in Dairen. Crowds of people came to the station to see China's first woman locomotive drivers, T'ien Kuei-ying, Wang Pao-hung, and Pi Kuei-ying, and especially to see their instructor, the Soviet Division Chief Comrade Lisov (Li-so-fu).

Comrade Lisov was the chief of the Mechanical Division in Dairen. In his welcoming speech to the first Chinese women locomotive drivers he said, through his interpreter Paunashenskaya (P'ao-na-hsi-yen-su-ka-ya), "I am very proud of the fact that the Dairen Railway Bureau could train the first Chinese women locomotive drivers. I trust they will go on increasing their skill."

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Comrade Lisov has shown a greater interest in these young Chinese women than in his own children. He said, "We Soviet technicians came from our far-away homes to work on the soil of the new, free China. On the 20th of December 1947, I was appointed chief of the Mechanical Division in Dairen. I believed that Chinese women could play a part in heavy industry. So in June 1949 I began teaching women how to drive a locomotive. I gave special attention to the living conditions, study, and work of women drivers. Now my ambition has been achieved!"

Labor Hero Li Ch'ing-jurg, deputy chief of the Dairen Mechanical Division, was on the train. He had helped Lisov train the women drivers. When praised for his part in the training, he modestly replied "Nonsense, this is the merit of the Communist Party and of our Soviet comrade, what merit have I?"

## APPENDIX

Dairen Railway Shops and Harbor Works

On 27 September /1949/, this writer paid a visit to the Dairen railway shops, which with its 27 branches, is the largest in China. Before the liberation /1945/, every important technical position was held by Japanese. Chinese were employed only for menial tasks. After the liberation by the Soviet Red Army the Chinese were elevated and taught techniques so that they could supervise and control their own shops.

Manager Tung told me, "Before the liberation, of the 7,000 men who worked here, 4,000 were Japanese and 3,000 were Chinese laborers. After the arrival of the Red Army, the Soviets began to train the Chinese laborers as technicians. As soon as a Chinese became proficient, the Soviets turned the job he had learned over to him. At present, the chiefs of the various shops are all men elevated from among the workers. Of the 7,600 persons now employed here only 76 are Russian technicians. There are also four Japanese." The great change that has come over this great group of people is the result of the aid of the Soviet specialists and of the attitude of the Communist Party and the laboring class that what is not known can be learned.

Cultural review classes were set up in the shops. The Soviet specialists, beginning with the simplest principles of mathematics, spared no pains to help the workman. For instance, in the Science Research Institute of the railway shops there were ten students with only primary school education. The Soviet comrades were willing to begin by patiently teaching them the rudiments of chemistry. At present, they are not doing badly.

In the whole of Manchuria practically all industrial and mining enterprises have received benefits from the Soviets. Using their scientific apprentice system, a teacher who completes the training of an apprentice receives a reward, an apprentice who learns his trade is promoted. In this way, one group of apprentices after another rapidly become journeymen instructors. During the last 4 years, by the use of this method, tens of thousands of technical workers have been trained to aid in expanding the people's democratic industries of the Northeast.

On 29 September /1949/, the writer received permission to visit the Dairen Harbor works. This is China's most important shipyard. In August 1946, it was still in shambles; now, in 1949, it is well on the way to becoming a modern, ship-building plant, with its yards teeming with workmen. During the last 4 years, the Soviet comrades have overcome all difficulties. In 1947, the Soviets introduced in the Dairen shipyards the boat cradle and the method of welding plates electrically. They taught the electric welding method to Chinese

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workmen, and this has resulted in greatly accelerated production. The Japanese were not acquainted with the boat cradle method, nor even with the electric welding method. They employed the archaic method of riveting plates together; hence they required the labor of 12 workmen for one month to build a 50-ton boat; at present, 12 workmen can finish such a boat in 5 days which is a speed-up of 600 percent. Not only have the Soviet comrades introduced these new methods of ship building, but they have also taught the Chinese a new fast method of casting anchor chains, which the writer himself saw in action. Molten metal was poured into a mold and out came a 100-ton anchor chain. This method is much faster and more economical than the Japanese method of joining links by forging and results in a much stronger chain.

#### Source of This Great Change

At the Dairen industrial exhibition one exhibit that attracted and held the attention of workers, staff members, and specialists alike was a three-dimensional model of the Far Eastern Ferrous Metal Machine Factory. This is a Sino-Soviet joint enterprise and the exhibit showed the factory as it was in 1948 and again in 1950. The 1948 model showed an empty waste, while the 1950 model showed the buildings of a great factory.

In April 1947, the Far Eastern Electrical Company took over a little factory which had been known as the United Tool Works. At that time it was a partially wrecked building with no glass in the windows and some parts without roofing. There were nearly 100 small lathes, but half of them were unusable and the remainder were only partially effective. Materials were in short supply and there was little market for the products. The output consisted of weighing scales, meat choppers, automobile cylinder rings, and drill points. A glance at the one very small smelting furnace in the yard indicates immediately the possible output of this factory, since it had to supply molten metal for the entire factory. It was from this beginning that the change, represented in the 1950 model, had come.

Construction of the new factory was begun in 1948 with the aid of the Soviet specialists. There were many difficulties. Although the workmen were happy at the prospect of a new and enlarged factory, they did not know how to go about it. Some favored completion of the entire plant before beginning work but the Soviet comrades showed them how to carry on production of goods and save expenses while continuing to erect the factory.

In the beginning a number of shops were needed. The foundry and the large-scale machine shop of the machinery factory had been damaged in the period following the 1945 liberation. Most of the roof tiles had been broken; in some cases roof timbers had been carried away; others were reduced to piles of rubble. The smelting furnace was rusty, the equipment of the electric furnace was in ruins. Some shops had no hoists.

The Soviet comrades advised using all materials that could be salvaged and supplementing them with stocks bought elsewhere. The partially wrecked buildings were rebuilt from the points where damage began. Only the first shop of the factory and the riveting shop are entirely new. The new structures are built wholly according to Soviet design with a great many skylights. The floors are of concrete so that there is no flying dust when work is in progress. These shops are not only high and roomy with plenty of sunlight so that the workers are comfortable and happy, but also the roofs are insulated with sawdust against heat in summer and cold in winter. Recently, steam heat has been installed. Thus the Soviet comrades have not only helped us to restore our factory, but have remodeled it into a modern healthful place to work.

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As the old shops were rebuilt, and new shops built from the ground up, the Soviet comrades set about to improve the old machinery. Old belt-driven lathes were remodeled into motor-driven lathes. At first, the manager of the machinery factory, Liu K'uei-wu, and the master technician, Liu Jen-yung, were sure it was impossible. But when they were put into use the advantages were marked. If one lathe went out of order it was no longer necessary to stop a whole battery as with belts. There was also a great increase of safety measures and reduction in disturbing noise.

When construction and installations had been completed the Soviet comrades gave aid in overcoming numerous difficulties. In July 1947, the metals factory had no electric welders. The Soviet comrades immediately imported 50 machines from the USSR. In a new heavy industry establishment, shortages of materials and tools are bound to be common. For instance, when there was a shortage of magnetic steel in the machinery factory, steel was brought in from the Soviet Union; the steel supply was likewise rectified so that production made uninterrupted progress. As production expanded, the old equipment could not meet the demands. For instance, although cast gear housing could be made, it was produced very irregularly. When a big shipment of lathes came in from the Soviet Union, gear lathes, planes, drill presses, flat-bed lathes, upright lathes (vertical lathes), 6-foot, 8-foot, and 12-foot ones were included. In the machine shop alone 24 were installed. When these bright and shining new machines were uncovered before the eyes of the workmen, they caressed them as they would a precious treasure and when they used them they were conscious of the great improvement in their work.

The new flat-bed lathes were capable of half a dozen types of operations and could cut a gear wheel in a half hour, whereas with an ordinary lathe 3 hours would have been required. These lathes were all automatic. The Soviet vertical lathes weigh 12 tons and are superior to any other in strength and versatility. They operate automatically, are self-oiling, and are equipped with electric lighting which makes them exceedingly convenient to use. They are all the latest Soviet 1949 models.

#### Soviet Military Assistance in the Port Arthur-Dairen Area

During the last 4 years, the Soviet Army garrison in the Port Arthur-Dairen Area, under the direct leadership of their garrison headquarters, has missed no opportunity to serve the people of the area in a personal way. In 1946, a short time after the liberation [from Japan], the enemies of all the Chinese people (Chiang Kai-shek and the Americans), threw a tight land and sea blockade around the Port Arthur-Dairen area. Factories closed because of shortage of materials and fuel. Workers were thrown out of employment to walk the streets. There was a great lack of food. Many people had only one meal of thin gruel a day. Some, indeed, had only a single cucumber or tomato. At this juncture, at the height of difficulties for the people of the area, the Soviet garrison brought in 30,000 tons of food which they distributed almost free to the people (the market price was 280 yuan per catty; the Soviet Army charged only 10 yuan per catty) carrying them over this difficult time. The Soviet garrison also set up a fish net factory and furnished employment and livelihood for several tens of thousands of people.

In 1947, after the Soviets had helped the people of the Port Arthur-Dairen area over the food crisis, and in the north the People's Liberation Army had defeated the Kuomintang forces and made possible the resumption of industry in the area, the Soviet Army gave great assistance in the resumption of that activity. In less than 3 years, the Soviet comrades by means of training classes, technical schools, and their apprentice system, have trained 312 Chinese factory superintendents, 183 chairmen and department heads, 534 section and sub-section chiefs and 2,740 model workers and labor heroes. Over 14,000 workmen have taken the first steps in mastering special skills.

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The Soviet Union also brought in more than 100 of the latest pattern machines as equipment for Port Arthur-Dairen industries and made available 30 year's experience in scientific construction and control of people's industries. Since learning and using the modern Soviet industrial control methods, such as the seven-grade wage system, economic budgets, collective bargaining/ contracts, reasonable proposals, etc., the industries of the area have made consistent progress. Statistics for the first half of the year [1949?] furnished by 18 industries indicate they had surpassed their goals by 22 percent. During the third quarter, major industries, such as the harbor industries and others, all reached their quotas.

Ever since the Soviet defeated the Japanese in 1945 and liberated the Northeast and the Port Arthur-Dairen area [Kwantung Leased Territory] to prevent Japanese imperialism from ever again seizing control, they have been observing the provisions of the Sino-Soviet Treaty of Friendship. In planting, cultivating, and harvesting seasons, the Soviet troops can be observed joining the People's Liberation Army troops in helping the farmers in their fields.

According to the figures compiled by Dairen Hsien authorities, the amount of seeds loaned to the farmers by the Soviets amounted to 90 percent of the total amount planted. In March [1950], Soviet troops presented free to the farmers 1,000 tons of white-skin seed potatoes. During March and April, the troops imported 1,500 tons of commercial fertilizer to solve the farmers' fertilizer problems. During the spring drought, the Soviet troops hauled water in trucks for the farmers' fields. When insect pests appeared in the Chin Hsien area, the Soviet troops sent planes to dust the crops with insecticides. The increase of crop production from 120,000 tons during the years of Japanese control to last year's [1949] production of 280,000 tons has freed the Port Arthur-Dairen area from dependence on outside sources for food supplies. The present production almost equals the consumption needs.

With the recovery and expansion of industry and agriculture has come a demand for a more abundant cultural life. During these 4 years, the Soviets imported 350,000 volumes of educational books devoted to Marxism-Leninism. The Soviet Foreign Cultural Association has presented the Port Arthur-Dairen Sino-Soviet Friendship Association with over 120 books, newspapers, and magazines, and also has donated to each of the Port Arthur-Dairen middle schools a complete set of physics and chemistry laboratory equipment.

The Soviet troops take a great interest in the health of the people of the area. When the plague broke out in 1947, the Soviet troops aided in the organization of an antiplague committee that was able quickly to eradicate the plague. When there was a cholera epidemic in 1949, the Soviet Union freely presented 600 pounds of medical cotton. Five large Soviet hospitals have been established at various points in the area. These hospitals are staffed by highly skilled Soviet physicians and provided with reasonably priced medicines.

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